

Abstract:

The present invention relates to a polymer powder which comprises copolymer, and to the use of this powder for shaping
5 processes, and also to moldings produced from this polymer powder.

The shaping processes are layer-by-layer processes which use powders, regions of the respective layer being selectively
10 melted via unfocused introduction of electromagnetic energy. The selectivity of the energy introduction process can - but without any intention of restricting the invention thereto - be achieved via masks, via application of inhibitors, or of absorbers or of susceptors. The inventive powder is preferably
15 used in processes in which selectivity is achieved via application of inhibitors or of susceptors, or via a masking method. After cooling, the moldings, now solidified, can be removed from the powder bed.

20 By way of contrast with moldings made from conventional powders, the properties of the components consisting of moldings constructed by the inventive processes, using the inventive powder, and particularly the mechanical and thermal properties of the components, can be varied widely, depending
25 on the composition. In particular in the case of amorphous copolymers, well-judged selection of comonomers can optimize flow behavior for the shaping process.

Another advantage is that processing can also be simplified by
30 using the correct composition of the copolymer. In particular, processing at relatively low temperatures is possible, simplifying temperature control and accelerating the process. The slower crystallization of semicrystalline copolymers, when compared with semicrystalline homopolymers, promotes the
35 coalescence of the molten particles and leads to better shrinkage behavior in the moldings.